REMARKS

Claims 1-8 currently appear in this application. The Office Action of August 27, 2002, has been carefully studied. These claims define novel and unobvious subject matter under Sections 102 and 103 of 35 U.S.C., and therefore should be allowed. Applicants respectfully request favorable reconsideration, entry of the present amendment, and formal allowance of the claims.

Rejections under 35 U.S.C. 112

Claims 1 and 6-8 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one of ordinary skill in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The Examiner alleges that the term "amidite" is enabled only for phosphoramidites, but not for any other inorganic lower oxidation state inorganic amide.

This rejection is respectfully traversed. Submitted herewith is a copy of U.S. Patent No. 6,268,490, which issued from the same parent application as the present application. In the '490 patent, the term "an amidite derivative" was accepted in the granted claims. Therefore, it is respectfully submitted that the

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term "an amidite derivative" is fully supported by the term "phosphoroamidites" as explained in the specification. The characteristic structure of the compounds reside in the immobilized conformation of the sugar portion in a nucleic acid, not in the "amidite" moiety.

Claims 1 and 3-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, lines 4-5, the term "an analogue of a purine or pyrimidine nucleic acid base" is said be lacking in properly defined metes and bounds because there is no subsequent definition of what structural features or shape is used to determine what substituent groups are within the scope of the noted term and which substituent groups are not.

This rejection is respectfully traversed. With respect to the term "an analogue of a purine or pyrimidine nucleic acid base" in claims 1 and 5, purine derivatives and pyrimidine derivatives are well known to those skilled in the art, as evidenced by the literature citations on page 5 of the specification. It is respectfully submitted that one skilled in the art would be able to select appropriate derivatives from the known

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derivatives without undue experimentation in order to prepare and antisense molecule. Additionally, the specification at pages 9 and 10 provides many examples of modified pyrimidine or purine nucleic acids, and one skilled in the art, reading these examples, could readily select other purine or pyrimidine derivatives that would be useful in preparing antisense molecules.

Claim 4 has been amended to define the variable "B" as in claim 1, and a final period has been added.

Claim 5 has been amended to make the variables consistent with the variables presented in the chemical structure.

Claim 6 has been amended to correct the typographical error.

In claim 3, applicant intended to use the term "phosphano", as this term means a group of the formula -PH2, wherein two hydrogen atoms can be substituted with one or more organic groups. Particularly, the group defined for "Y" in claim 3 means that the hydrogen atoms of -PH2 are replaced b a 2-cyanoethoxy group and a diisopropylamino group. Submitted herewith is a page of a textbook of nomenclature of chemical compounds which names -PH2 as "phosphano."

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Double Patenting

Claims 1-8 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 6,268,490.

This rejection is respectfully traversed. Submitted herewith is a terminal disclaimer which is believed to obviate the double patenting rejection.

NOTICE TO COMPLY: SEQUENCE LISTING

Applicants have added into the present specification a new paper copy Sequence Listing section according to 37 C.F.R. §1.821(c) as new pages. Furthermore, attached hereto is a 3 1/2" disk containing the "Sequence Listing" in computer readable form in accordance with 37 C.F.R. §1.821(e).

Applicants have amended the specification to insert SEQ ID Nos, as supported in the present specification.

The following statement is provided to meet the requirements of 37 C.F.R. §1.821(f) and 1.821(g).

Under U.S. rules, each sequence must be classified in <213> as an "Artificial Sequence", a sequence of "Unknown" origin, or a sequence originating in a particular organism, identified by its scientific name.

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Neither the rules nor the MPEP clarify the nature of the relationship which must exist between a listed sequence and an organism for that organism to be identified as the origin of the sequence under <213>.

Hence, counsel may choose to identify a listed sequence as associated with a particular organism even though that sequence does not occur in nature by itself in that organism (it may be, e.g., an epitopic fragment of a naturally occurring protein, or a cDNA of a naturally occurring mRNA, or even a substitution mutant of a naturally occurring sequence). Hence, the identification of an organism in <213> should not be construed as an admission that the sequence *per se* occurs in nature in said organism.

Similarly, designation of a sequence as "artificial" should not be construed as a representation that the sequence has no association with any organism. For example, a primer or probe may be designated as "artificial" even though it is necessarily complementary to some target sequence, which may occur in nature. Or an "artificial" sequence may be a substitution mutant of a natural sequence, or a chimera of two or more natural sequences, or a cDNA (i.e., intron-free sequence) corresponding to an intron-containing gene, or otherwise a fragment of a natural sequence.

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The Examiner should be able to judge the relationship of the enumerated sequences to natural sequences by giving full consideration to the specification, the art cited therein, any further art cited in an IDS, and the results of his or her sequence search against a database containing known natural sequences.

In view of the above, it is respectfully submitted that the claims are now in condition for allowance, and favorable action thereon is earnestly solicited.

Respectfully submitted,

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別紙

(2-Cyanoethoxy(diisopropylamino)phosphano group
と呼ぶ

表11-2 P, As, Sb, Biを含む化合物に使用する接頭語と語尾語

基	接頭語	接尾語
$-AsH_2$	arsano(arsino)	arsane(arsine)
$-AsH-$	arsanediyl(arsinediyl)	同
$-As<$	arsanetriyl(arsinetriyl)	同
$-AsO$	arsenoso	—
$-AsO_2$	arso	—
$<As(=O)OH$	arsinico	arsinic acid
$-As(=O)(OH)_2$	arsono	arsonic acid
$-As=As-$	arsano	—
$-AsH_4$	arsoranyl	λ^5-arsane または arsorane
$-PH_2$	phosphano(phosphino)	phosphane(phosphine)
$-PH-$	phosphanediyl(phosphinediyl)	同
$-P<$	phosphanetriyl(phosphinetriyl)	同
$-PO$	phosphoroso	—
$-PO_2$	phospho	—
$=P(=O)OH$	hydroxyphosphonyl(phosphinico)	phosphinic acid
$-P(=O)(OH)_2$	phosphono	phosphonic acid
$-P=P-$	phosphoro	—
$-P=N-$	phosphazo	—
$-P=As-$	phosphaarseno	—
$-PH_4$	phosphoranyl	λ^5-phosphane または phosphorane
$-SbH_2$	stibano(stibino)	stibane(stibine)
$-SbH-$	stibanediyl(stibinediyl)	同
$-Sb<$	stibanetriyl(stibinetriyl)	同
$-BiH_2$	bismuthano(bismuthino)	bismuthane(bismuthine)
$-BiH-$	bismuthanediyl(bismuthinediyl)	同
$-Bi<$	bismuthanetriyl(bismuthinetriyl)	同

* ( ) 内名称は従来名称。λ^5については10.5 (iii) を参照

$-PH_2$ の H が 2-cyanoethoxy 基と diisopropylamino 基に置換した group を
2-cyanoethoxy

(i) (1) の方法

(ii) つぎの酸の誘導体として命名する。ただし，Sb と Bi には適用できない。

phosphinous acid	H_2POH	arsinous acid	H_2AsOH
phosphonous acid	$HP(OH)_2$	arsonous acid	$HAs(OH)_2$
phosphorous acid	$P(OH)_3$	arsenous acid	$As(OH)_3$

(iii) 無機物錯体として命名する。

例：$(C_6H_5)_2POCH_3$ (i) methoxydiphenylphosphane
(R_3MX 型化合物) (ii) methyl diphenylphosphinite
(iii) methoxodiphenylphosphorus (III)

$C_6H_5P(OH)_2$ (i) dihydroxy(phenyl)phosphane
(RMX_2 型化合物) (ii) phenylphosphonous acid
(iii) dihydroxophenylphosphorus

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